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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,683	03/09/2001	Lawrence J. Revit	12671US02	7009

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EXAMINER
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MICHALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">09/803,683</p>	<p>Applicant(s)</p> <p align="center">REVIT ET AL.</p>	
	<p>Examiner</p> <p align="center">Justin Michalski</p>	<p>Art Unit</p> <p align="center">2644</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-20 and 26-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-20 and 26-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
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| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/> Paper No(s)/Mail Date _____.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/> Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
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### DETAILED ACTION

1. The amendment filed 17 February 2006 has been entered. The finality of the previous rejection has been withdrawn.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 28 and 29 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 28 and 29

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recites the broad recitation "***placed and*** oriented arbitrarily" (emphasis added), and the claim also recites 'located at approximately ear level' which is the narrower statement of the range/limitation.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14-20, 27-31, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shennib (US Patent 5,825,894) in view of Kasai et al. (Hereinafter "Kasai") (US Patent 6,067,360).

Regarding Claim 14, Shennib discloses a multi-channel sound reproduction system for testing hearing and hearing aids (Figure 5 and 7) comprising: at least one audio source (Figure 1, storage 17); a listening position at which a test subject is placed (Figure 5); a plurality of loudspeakers located at approximately ear level of a test subject in the listening position (Figure 7 speakers 89-92), the plurality of loudspeakers for receiving a plurality of audio signals from the audio source (Figure 1 discloses speakers 16 connected to storage 17); a first further loudspeaker located at approximately ear level and at front and center of a test subject in the listening position (Figure 7 speaker 89), the first further loudspeaker for receiving a further audio signal from the audio source

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(Figure 1 discloses speakers 16 connected to storage 17); a second further loudspeaker located at an overhead center position above the test subject in the listening position (Figure 7 discloses speaker 93 located over the head in the sagittal, i.e. center, plane). Although Shennib discloses creating signals that are representative signals received in real listening environments in a three-dimensional space (Column 9, lines 27-41). Although not directly above the test subject it would be a matter of design choice to place the speaker directly above the subject since claim 14 only claims speaker locations. Shennib does not disclose the at least one audio source transmitting a time-offset or delayed sum of the at least a portion of the plurality of audio signals and the further audio signals to the second further loudspeaker. Kasai discloses a method for processing audio signals to produce a surround-effect (i.e. real listening environment in a three-dimensional space) (Column 2 lines 26-31). Kasai discloses processing comprising of delay processors (Figure 5, references 14L, 14R, and 30) and summers (44, 46, 16, 18, and 54) to provide the surround sound effect of Figure 4. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include processing to delay and sum signals in order to provide a three-dimensional sound space as required by Shennib.

Regarding Claim 15, Kasai further discloses all signals C, F<sub>L</sub>, F<sub>R</sub>, S<sub>L</sub>, S<sub>R</sub> being added in adder 54.

Regarding Claim 16, Kasai further discloses in figure 5 the audio source comprises channels C, F<sub>L</sub>, F<sub>R</sub>, S<sub>L</sub>, S<sub>R</sub>, and LFE (i.e. a 5.1 channel medium).

Regarding Claim 17, Kasai further discloses signals (C, F<sub>L</sub>, F<sub>R</sub>, SL, S<sub>R</sub>) for speakers center, front left, front right, surround left, and surround right which correspond to four corners relative to a listening position.

Regarding Claim 18, Kasai further discloses a signal (LFE) for a subwoofer (Figure 4, speaker 4S).

Regarding Claim 19, Kasai further discloses a low-pass filtered sum of a plurality of audio signals to the subwoofer (Figure 5, filter 60).

Regarding Claim 20, Kasai further discloses in Figure 5, signals C, F<sub>L</sub>, F<sub>R</sub>, SL, S<sub>R</sub>, and LFE which all are used to produce the output signals (i.e. signals compete for output).

Regarding Claim 27, Shennib further discloses an audiometer (Fig. 1, audiometer 19).

Regarding Claim 28, Shennib further discloses the plurality of loudspeakers are oriented arbitrarily about the listening position (Fig. 5).

Regarding Claim 29, Shennib further discloses wherein placed and oriented arbitrarily about the listening position comprises a configuration in which the loudspeakers face different directions relative to each other and relative to the listening positions (Figure 5 shows speakers facing different directions relative to each other and also relative to the orientation of listening position).

Regarding Claim 30, Schennib further discloses processed audio signals representing a target signal (Fig. 10, direct paths) and an interfering noise signal (Fig. 10, reflective paths).

Regarding Claim 31, Schennib further discloses level-dependent attenuators (Volume control 219).

Regarding Claim 35, Schennib further discloses speakers are equidistant (Fig. 5).

Regarding Claim 36, Schennib further discloses at least two of the plurality of loudspeakers generate sound that appears to, but does not, emanate from another of the plurality of loudspeakers. (Schennib discloses reproducing a three-dimensional sound field which will inherently include sounds that appear to emanate from another of the plurality of loudspeakers) (Col. 9, lines 28-42).

Regarding Claim 37, Schennib further discloses a plurality of amplifiers (Fig. 3, amplifier 46 and 54).

6. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schennib/Kasi as applied to claim 1 above in view of Suzuki (US Patent 6,381,333).

Regarding Claim 32, Schennib/Kasi discloses a system as stated apropos of claim 1 above including using a plurality of speakers arrayed around the patient's head so that the natural hearing environment in which the aid is to be used can be recreated (Column 5, lines 54-58). Schennib/Kasi does not disclose discrete adjusted versions of the signals or one of the signals comprising a combination of the plurality of audio signals.

Grimani discloses a sound processing circuit (Figure 2) creating signals for a plurality of speakers to be situated around a listener for surround sound. Schennib/Kasi discloses all but one (signal SW) of the plurality of processed audio signals (signals L,

R, C, LS, and RS) comprises discrete adjusted versions (adjusted by filters 8) of the plurality of audio signal and wherein the one of the plurality of processed audio signals comprises a combination of the plurality of audio signals (signal SW comprises of signals RS, LS, C, R, and L). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include circuitry in the system in order to provide a multi channel surround sound system to create the natural hearing environment around a listener and can emit low frequencies.

Regarding Claim 33, Suzuki further discloses one of the plurality of loudspeakers comprises a subwoofer (Fig. 2, signal SW), and wherein the one of the plurality of processed audio signals (Signal SW) is received by the subwoofer.

Regarding claim 34, Suzuki further discloses signals (L, R, C, LS, RS) are supplied to the same summing network 11A providing the same contribution.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (571)272-7524. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM



March 13, 2006



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